

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 1.28**WELDING INSPECTION REPORT****Resident Engineer:** Casey, William**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-027923**Date Inspected:** 06-Jul-2012**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1830**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Job Site**CWI Name:** As noted below**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** SAS OBG**Summary of Items Observed:**

Quality Assurance Inspector (QA) Douglas Frey was at the American Bridge/Fluor (ABF) job site at Yerba Buena Island in California between the times noted above in order to monitor Quality Control functions and the in process work being performed by ABF personnel. The following items were observed:

12E-E2.1-C1 y+ 27000mm (Interior)

This QA Inspector at random intervals observed ABF/JV qualified welder Mike Jimenez #4671 placing seal weld passes using the SMAW process in the 1G flat position on 12E-E2.1-C1 on the interior of the OBG. The work at this location was initiated on 7/4/2012. QC Inspector Salvador Merino was observed measuring the preheat temperature and setting the parameters to ensure compliance with the welding procedure specification (WPS) ABF-WPS-D1.5-1040C-CU. The welder was observed using a small disc grinder to blend the start/stop edges of the work to provide a smooth transition. The welder was observed utilizing 3.2mm E7018-H4R electrodes drawing amperage of 132. The electrodes were obtained from a baking oven verified by this QA Inspector. On a subsequent observation this QA Inspector monitored the work for quality and noted that it was completed on this date and appeared to be in general conformance with the contract documents.

12E-E2.1-C1 y+100mm (Interior)

This QA Inspector randomly observed ABF/JV qualified welder Richard Garcia #5892 using the Flux Core Arc Welding (FCAW) process in the 2G horizontal position on 12E-E2.1-C1 on the interior of the OBG. Work at this location was initiated on 7/5/2012. This QA Inspector observed QC Inspector Salvador Merino verify prior to the

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start of welding operations, that the minimum preheat temperature as per the approved WPS was established; and afterwards verified that the welding parameters (Amps, Volts and Travel Speed) were in accordance with ABF-WPS-D1.5-1-3040A-1. The welder was observed grinding and blending the start/stop edges of the work utilizing a small disc grinder and compressed air in between passes as QC measured the inter-pass temperatures with an infra-red temperature gun. This QA Inspector made subsequent observations throughout the shift to monitor quality and noted that the work at this location was in progress and appeared to be in general conformance with the contract documents.

13E-E2.8 (Interior)

This QA Inspector was notified by Quality Control Inspector Salvador Merino that ABF welding personnel had commenced excavation operations on R3 welds at 13E-E2.8 on the interior of the OBG without the required preheat. This location is specified as Seismic Performance Critical Member (SPCM) and the weld locations listed below have Request for Welding Repair (RWR) numbers. QC notified ABF welding personnel and recorded the locations as;

Y+11145mm- RWR-201206-063

Y+10795mm- RWR-201206-062

Y+10640mm- RWR-201206-061

Y+9345mm - RWR-201206-064

This QA Inspector generated an Incident Report on this date and notified METS QA Lead Inspector Danny Reyes and METS QA Task Leader Bill Levell via email for review and disposition of the report due to the non-compliance with AWS D1.5-2002 - Section 12:

12.17.6 Repair Procedure minimum provisions: (3) The preheating temperature prior to air carbon arc gouging shall be described in the WPS. Preheat for gouging shall not be less than 65° C [150° F].

ABF-WPS-D1.5-1004-Repair: Minimum preheat of 110° C (225° F) shall be used for excavation with carbon arc gouging (CAG).

13E-E2.8 Repair Welding (Interior)

This QA Inspector randomly observed ABF welder Rick Clayborn #2773 performing the back-gouge operation of ultrasonic rejectable indications on 13E-E2.8 on the interior of the OBG. The welder was observed working on excavations at y+6660, y+6430, y+5865 and y+3575. This QA Inspector observed QC Inspector Sal Merino perform a Magnetic Particle Inspection (MT) of the excavation to determine the soundness of the metal. Upon completion of the testing this QA Inspector observed that no rejectable indications were present. This QA Inspector randomly observed the welder performing the repair welding operation as per the SMAW process in the (4G) overhead position. This QA Inspector observed the use of E7018-H4R electrodes and QC Inspector Sal Merino verify that the preheat temperature was at least the minimum required and that the welding parameters were in accordance with WPS D1.5-1004- Repair. On a subsequent observation, the welder was noted as continuing the repair welding and between passes the QC Inspector verified the welding parameters and surface temperatures utilizing a Fluke 337 clamp meter to measure the electrical welding parameters and Tempilstik Heat

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Indicators for verifying the preheat and inter-pass temperatures. This QA Inspector noted that the electrodes were stored in electrically heated, thermostatically controlled oven after removal from the sealed containers. The exposure limits of the electrodes appeared to comply with the minimum storage oven temperature of 120 degrees Celsius as per the contract documents. Thermal heating blankets were placed for a period of 1 hour at 450°-650° as specified in the WPS. RWR's referenced for these welds are: 201206-067, 201206-066 and 201206-065. This QA Inspector noted that the work was in progress and appeared to be in general conformance with the contract documents.

Summary of Conversations:

Conversations were relevant to the specific locations.



Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Nina Choy 510-385-5910 , who represents the Office of Structural Materials for your project.

Inspected By: Frey,Doug

Quality Assurance Inspector

Reviewed By: Levell,Bill

QA Reviewer